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ABSTRACT

This manual contains a work sample intended to assess a handicapped student's interest in and potential to pass sucessfully a training program in automotive mechanics or in a similar automotive job. Section 1 describes the assessment, correlates the work performed and worker traits required for completing the work sample, and lists related occupations and DOT codes. Instructions to the evaluator are provided in the next section. The conditions and administration equipment are detailed, and the set-up and breakdown procedures are illustrated. Section 3, on administration, provides a student orientation including student material with an explanation and illustration of equipment and/or procedures. This section also contains instructions for task procedures actions to be taken, as well as post sample interview topics. Section 4 explains the method of scoring and provides forms. Section 5 lists technical data (norms, reliability, validity) to be included in a supplement to this manual. Contents of the section on maintenance and construction include information on tool and equipment maintenance, a materials list (equipment, source, price), work sample diagrams and/or photographs, and assembly instructions. Section 7 cites references. An appendix defines terms. (YLB)

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AUTOMOBILE MECHANIC ASSISTANT

Work Sample

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TABLE OF CONTENTS

SECTION HEADING		Page
I.	INTRODUCTION	1
	A. Assessment Description	1
	B. Related Occupations	4
II.	INSTRUCTIONS TO THE EVALUATOR	5
	A. Work Sample Conditions	5
	B. Administration Equipment	5
	C. Set-up and Breakdown	6
III.	ADMINISTRATION	9
	A. Student (client) Orientation	9
	B. Instruction and Demonstration	16
IV.	SCORING	19
	A. Explanations	19
	B. Forms	19
V.	TECHNICAL DATA	23
VI.	MAINTENANCE AND CONSTRUCTION	24
	A. Maintenance	24
	B. Materials List	24
	C. Diagrams and/or Photographs	26
	D. Assembly Instruction	28
VII.	REFERENCES	30
	APPENDIX	

I. INTRODUCTION

A. Assessment Description

The Automobile Mechanic Assistant Work Sample is intended to assess a student's interest in and potential to successfully pass a Training Program in Automotive Mechanics (DOT 620.684-014) or in a similar automotive job. The Automobile Mechanic Assistant Work Sample falls within the Mechanics and Machinery Repair Occupational Group Arrangement and Elemental Work Mechanical Worker Trait Group to which the Work Sample is related.

* * * *

The work performed and worker traits required for completing the Automotive Mechanic Assistant.

WORK PERFORMED	WORKER TRAITS REQUIRED
Assemble 3/8" ratchet wrench with 6" extension and 9/16" socket.	GED 3 SVP 1 APT G-3, K-3, F-3, M-3 WS 1, 8 PD S, 4 WC 1 WA 1
Removes retaining bolts from thermostat housing with wrench.	GED 3 SVP 1 APT G-3, K-3, F-3, M-3 WS 1, 8 PD L, 1, 3, 4 WC 1 WA 1
Lifts and moves aside the thermostat housing with hose attached.	GED 1 SVP 1 APT G-4, K-4, M-4 WS 1 PD S, 1, 3, 4 WC 1 WA 1
Removes or scrapes off old gasket seal.	GED 3 SVP 1 APT G-4, K-3, F-4, M-4 WS 1, 7 PD S, 1 WC WA 1
Remove old thermostat.	GED 1 SVP 1 APT G-4, K-4, M-4 WS 7 PD S, 1, 3, 4 WC 1 WA 1
Installs new thermostat.	GED 4 SVP 1 APT G-3,K-3, M-3 WS 8 PD S,1,3,4 WC 1 WA 1

WORK PERFORMED	WORKER TRAITS REQUIRED
Installs new gasket seal.	GED 3 SVP 1 APT G-3, K-3, M-3 WS 7, 8 PD S, 1, 3, 4 WC 1 WA 1
Installs thermostat housing with 2 retaining bolts.	GED 3 SVP 1 APT G-3, F-3, K-3, M-3 WS 7, 8 PD L, 1, 3, 4 WC 1 WA 1
Tightens retaining bolts with torque wrench.	GED 3 SVP 1 APT G-3, N-3, K-3, M-3 WS 7, 8 PD L, 1,3, 4 WC 1 WA 1

B. Related Occupations

Automotive Mechanic Assistant Work Sample I

DOT Description

Automobile Mechanic Assistant (620.684-014)

Related Occupations	DOT Code
TRACTOR MECHANIC HELPER	620.684-030
BRAKE ADJUSTER	620.684-018
AUTOMOBILE WRECKER	620.684-010
BRAKE DRUM LATHE OPERATOR	620.682-010
MAINTENANCE MECHANIC HELPER	620.664-014
CONSTRUCTION EQUIPMENT- MECHANIC HELPER	620.664-010

II. INSTRUCTIONS TO THE EVALUATOR

A. Work Sample Conditions

The Automobile Mechanic Assistant Work Sample I is to be administered indoors or outdoors with good overhead lighting and moderate noise level from neighboring work areas. The Sample involves physical demands such as standing, stooping, crouching,, reaching, handling, fingering, feeling and seeing. It must be done by a two-armed person, standing in front of the Work Sample. This Work Sample was designed to simulate the functions and methods of an Automotive Mechanic Assitant.

The Sample is not physically hazardous in any way and requires no safety equipment, although all health and safety precautions should be adhered to regarding Occupational Safety and Health Act requirements as well as those safety factors which may be encountered in local industry and unique job requirements.

B. Administration Equipment

The following equipment is required prior to Administration:

Evaluator Equipment:

- Stop Watch
- Manual for the Auto Mechanic Assistant Work Sample 1
- Task Observation Sheet

Student Equipment:

- Torque Wrench with 1/2" to 3/8" Adapter or Reducer
- 3/8" Drive Ratchet Wrench
- 3/8" Drive Extension 6" long
- 9/16" (3/8" Drive)Socket
- New Thermostat
- New Gasket Seal
- Simulated work sample-engine compartment containing intake manifold with thermostat housing set-up.

Note: Use of Safety Glasses is required on this work sample.

C. Set-up and Breakdown

An illustration of correct set-up and breakdown procedures for the Automobile Mechanic Work Sample 1 is shown in Figures 1, 2 and 3.

The Work Sample is to simulate an automobile engine compartment. The student stands facing the front of the Work Sample box.

Figure 1

Correct Work Sample Set-up

While giving instructions and pointing out work sample parts, the evaluator stands to the right of the Work Sample so as not to obstruct the student's view of the Work Sample. Figure 2 illustrates the tools needed for the Work Sample. The tools are placed to the side and front of the Sample on a work bench.

Figure 3 illustrates correct Work Sample breakdown.

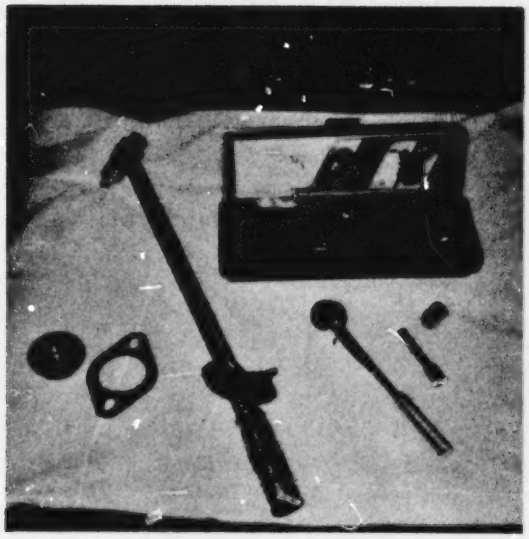


Figure 2

Tools needed- Placed on simulated work bench

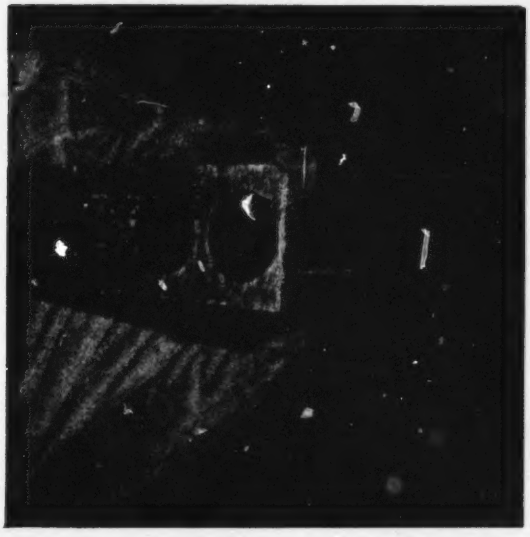


Figure 3

Correct Work Sample breakdown

Timing Procedures:

The Work Sample is timed from the moment the student signifies that he or she understands the instructions and picks up the first tool and indicates thru he or she is ready to begin removal until the last tool needed is put down and indicates completion.

Quality Checks:

Quality is checked by the evaluator once the student has completed the work sample and compares work to Task Observation and Scoring Record.

III. ADMINISTRATION

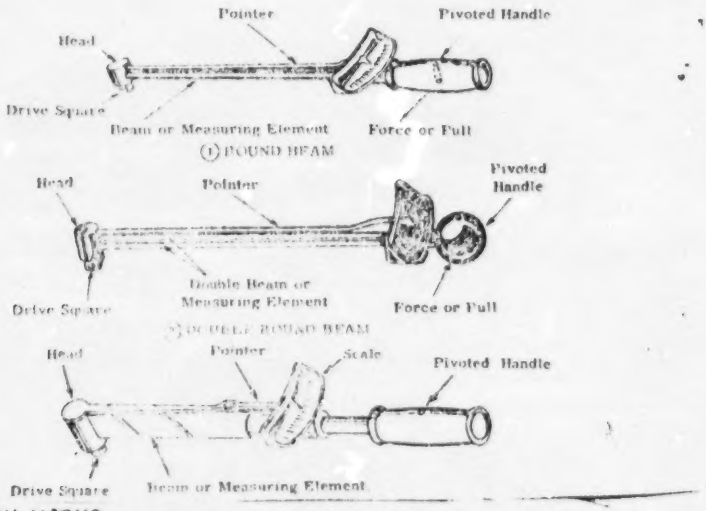
A. Student Orientation

Read or paraphrase the following information to the student

The Work Sample that you are going to do is called the Automobile Mechanic Assistant Work Sample I.
The work you will be doing on the Work Sample, is some of the work that Assistant Auto Mechanics do in the Automotive Services Industry.
On this Work Sample, you will carefully look over and inspect the thermostat housing to intake manifold set-up. In looking over this set-up, your job on this Work Sample will be to remove the thermostat housing, gasket and thermostat, in order to replace a new thermostat in the intake manifold.
The purpose of a thermostat in any water-cooled automotive engine is to supply heat to get the engine to efficient operating temperatures and also for cooling the engine when it reaches beyond normal operating temperatures.
Before you start the required work, understand and know how to manipulate the hand tools. The following pages will explain the use for the torque wrench. After you have done this, you may begin thermostat housing removal. I'll show you how to do the work in a minute, but first, do you have any questions?

HOW FASTNER TORQUE IS MEASURED

To secure recommended torque, a measuring tool called a TORQUE WRENCH is a "must". The torque wrench will measure the torque (twisting force) that is being applied to the fastner. Single round beam, double round beam, and single tapered beam type of torque wrenches, are shown below.



HOW A TORQUE WRENCH WORKS

The torque wrench uses Hooke's law in its construction. By deflecting (bending) a steel beam (in some cases a coil spring), the relationship between the pull on the handle (torque) and the amount of beam deflection is readily established.

When the head is attached to the fastner and the handle is pulled, the flexible beam is bent. The pointer rod, being attached to the solid wrench head, is not bent. Since the scale is attached to the handle element, it follows the flexible beam thus moving the scale under the pointer end. The scale is calibrated so that the operator can see how much torque is being applied.

FASTENERS AND TORQUE WRENCHES

TORQUE IN FOUR STEPS

Always run the fasteners up snug (do not overtighten) with a regular wrench and then observe the following four steps.

1. Run each fastener, in the proper sequence, up to one-third of the recommended torque setting.
2. Repeat the process running up to two-thirds of the setting.
3. Repeat, running every fastener up to full torque.
4. This is a very important and frequently overlooked step- often to the embarrassment of the mechanic when the unit falls. Repeat step 3 to be positive you have not missed a fastener.

HOLDING THE TORQUE WRENCH

Where possible(it saves skinned knuckles) pull on the wrench. Keep your hand on the handle and if using a pivoted handle, keep the handle from tipping against the wrench. This is important as the pivot is where the pull should be for exact readings. Items A and B, in Fig. 3-37, show the correct hand position. In C, the mechanic has placed his hand on one end of th handle tipping it and causing interference with wrench action: D shows an entension in place on the handle. This should never be done.

PULLING THE WRENCH

When using a beam-type torque wrench, especially the single round beam, be careful to pull in such a way that the beam is bent only in the direction of travel. If the wrench is bent up or down on the scale thus impairing the reading.

Place the palm of the left hand on the head of the wrench to counter-balance the pull on the handle. Allow your palm to turn with the wrench.

Fig. 3-38, illustrates the use of the left hand for balance. In this case, both an adapter and extension are being used.

STICKING

Quite often when nearing full torque value, you will hear a popping sound and the fastener will seem to stick and stop turning. If you

increase pressure on the wrench, it may run up to full torque without moving the fastener.

You will find that when a fastener has stuck, the torque required to start it moving (breakaway torque), is much higher than that required to keep it moving thus indicating that breakaway torque is not a true picture of actual fastener torque.

When sticking occurs, run the fastener in an off-direction (about one-half turn) until it breaks

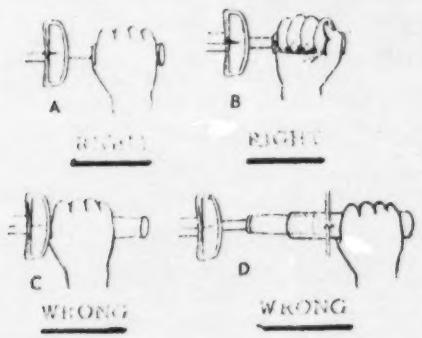


Fig. 3-37. Grasp the torque wrench properly.

free, then, with a smooth and steady pull, sweep the wrench handle around in a tightening direction. Stop when the required torque is reached.

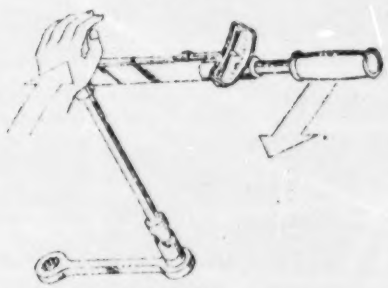


Fig. 3-38. Use the palm of the hand on the head of the wrench to balance the pull on the handle.
(P. A. Sturtevant Co.)

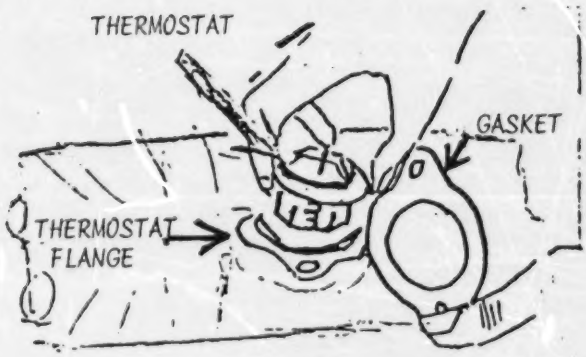
RUN-DOWN TORQUE

Self-locking nuts, slightly damaged threads or foreign material will cause the fastener to turn with some degree of resistance before it begins drawing parts together. This is called run-down torque.

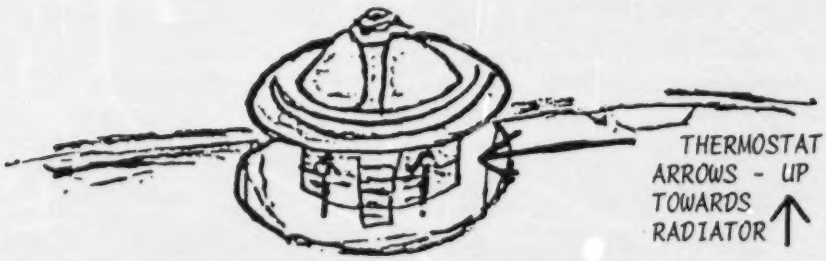
If at all noticeable, add this run-down torque to the recommended torque. Determine run-down torque only during the last one or two turns.

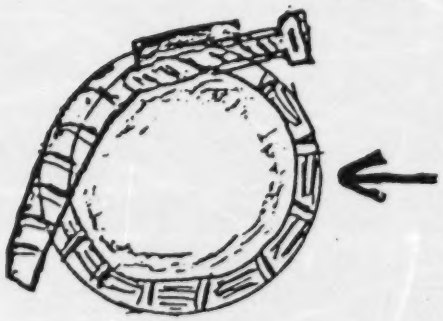
THERMOSTAT GASKET

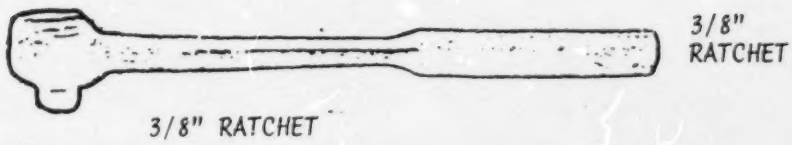
Fig. 4-3 Simple paper gasket. The paper is soft, tough and water resistant.



Installing a thermostat. Pellet faces engine to contact water in engine jacket. (Chevrolet)







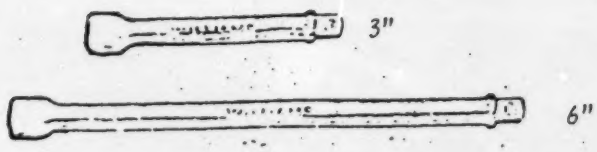


Fig. 1-46A Socket extension bars.

3/8" EXTENSION

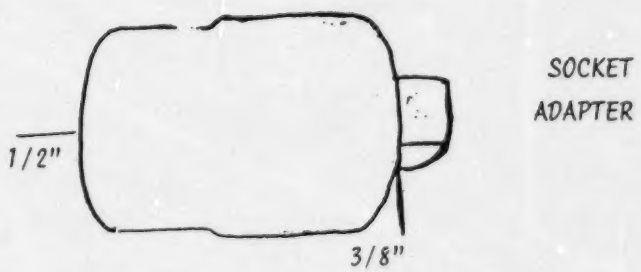


Fig.1-45 Socket adapter.

B. Instructions and Demonstrations (Part 1)

Sighted population. Safety Glasses required.

You may have some time to become familiar with the hand tools, after you have read the instructions. Evaluator oral instructions and illustrations will orient both student and evaluator for task procedures.

Statement	Action
Your job is to remove the thermostat housing and replace a new gasket seal and thermostat positioned under thermostat housing.	Point to compartment where thermostat housing is located.
Take 3/8" ratchet wrench with 6" extension and 9/16" socket.	Point to ratchet, extension and socket placed on tool bench.
Remove the two (2) retaining bolts that secure the thermostat housing to the intake manifold with the tools in hand.	Point to the two (2) 9/16" retaining bolts and thermostat housing. Evaluator demonstration.
Lift up the housing with the waterhose attached.	Evaluator should demonstrate required action.
Remove gasket seal positioned on manifold flange.	Point to gasket seal. (Evaluator will identify with illustration given).
Remove old thermostat from manifold flange.	Evaluator will identify and demonstrate. (Same as above)
When you have finished the Removal Phase, inform the Evaluator that you are finished. Do you understand the instructions? Put on your safety glasses. Go ahead and begin.	Observe whether there are any questions and then allow student to proceed.

B. Instructions and Demonstrations (Part 2)

Sighted population. Safety Glasses optional.
You may have some time to become familiar with the Replacement Procedures, after you have read the instructions.
- Evaluator oral instructions and illustrations will orient both the student and evaluator, for task procedures.

Statement	Action
Your job now is to replace the thermostat, gasket seal, thermostat housing and retaining bolts.	Point to where thermostat should seat on the manifold flange.
Install thermostat (spring-end into manifold or arrow marked "up". Also arrow marked "towards radiator". (new thermostat in package provided).	Identify spring-end on thermostat and arrow markings. Illustration required.
Install and position new gasket seal over thermostat. (Line up bolt holes in gasket to manifold flange holes.)	Evaluator should demonstrate required action.
Install and position thermostat housing over thermostat and gasket seal. Line up bolt holes and insert retaining bolts.	Same as above.
Tighten bolts to TORQUE SPECIFICATIONS GIVEN-(15 ft. lbs.) using torque wrench.	Same as above and explanation of how to use Torque Wrench Illustration req. refer to page 11.
When you have the REPLACEMENT PHASE finished, inform the Evaluator that you are finished. Do you understand the instructions? Go ahead and begin.	Observe whether there are any questions and then allow student to proceed.

After assessment has been completed, please return all of the hand tools to the work bench.

Post Sample Interview Topics

1. Did you like or dislike the course tasks?
2. What do you think of automotive service now that you have completed the work sample?
3. Do you need more information about automotive mechanic assistant training?

IV. SCORING

A. Explanations

1. Method of scoring:

The measure of Productivity will be assessed by comparing the time needed to complete all tasks, with student norms.
Quality will be assessed by the total number of errors upon removal and replacement procedures of an oil filter.
(torque specifications - accurate to ± 1 ft. lb.)

2. Work performance factors to be observed:

- Student able to follow verbal instructions.
- Physical capacities needed to manipulate objects to complete the work sample.
- Neatness- Returning of hand tools and equipment to proper places.

B. Forms

1. Task Observation Record.

School _____

AUTOMOTIVE MECHANIC ASSISTANT WORK SAMPLE I

Task Observation Record

Critical Errors (5 pts. each)

_____ 1. Location of thermostat housing incorrect.

_____ 2. Failure to locate correct ratchet, extension and socket.

_____ 3. Failure to assemble ratchet, extension and socket.

_____ 4. Failure to loosen retaining bolts for removal of thermostat housing.

_____ 5. Failure to remove old gasket seal.

_____ 6. Failure to remove old thermostat.

_____ 7. Failure to install new thermostat.

_____ 8. Incorrect installation (position or direction) of new thermostat.

_____ 9. Failure to replace a new gasket seal.

_____ 10. Failure to install both retaining bolts.

_____ 11. Failure to finger-tighten retaining bolts.

_____ 12. Failure to hand-tighten retaining bolts upon installation of thermostat housing with ratchet wrench set up.

_____ 13. Failure to tighten retaining bolts with torque wrench to 15 ft. lbs.

Observational explanations for 1 through 13.

Task Quality Errors (3 pts. each)

_____ 14. Failure to position body in front of work sample.
_____ 15. Installs gasket seal before new thermostat.
_____ 16. Incorrect usage of ratchet wrench set up (clockwise/counter clockwise).
_____ 17. Installs retaining bolts before thermostat and Housing set-up.
_____ 18. Failure to tighten bolts evenly.
_____ 19. Failure to use torque wrench.
_____ 20. Failure or neglect to return all equipment to proper places.

Observational explanations 14 through 20.

Put additional comments and observations below.

_____ Critical errors

_____ Task quality errors

_____ Min _____ Sec Total time

_____ Date taken

_____ Evaluator

_____ Student

V. TECHNICAL DATA

A supplement to this manual is being developed at the time of this printing. It will include:

1. Norms
2. Reliability, test-retest studies
3. Validity
   a. Content validity - established through the Course Analysis based on methods suggested by U. S. Dept. of Labor Job Analysis techniques.
   b. Predictive Validity
      To be established through follow-up studies of students previously tested.

VI. MAINTENANCE AND CONSTRUCTION

A. Maintenance

After each administration the evaluator should see that all tools and equipment are in their proper places. (Include safety glasses- condition and cleanliness).
Tools should be kept clean after each administration.
After each administration check thermostat housing bolts (worn or stripped beads or threads of the retaining bolts).
Check work sample construction and also check tools for condition and wear.

B. Materials List

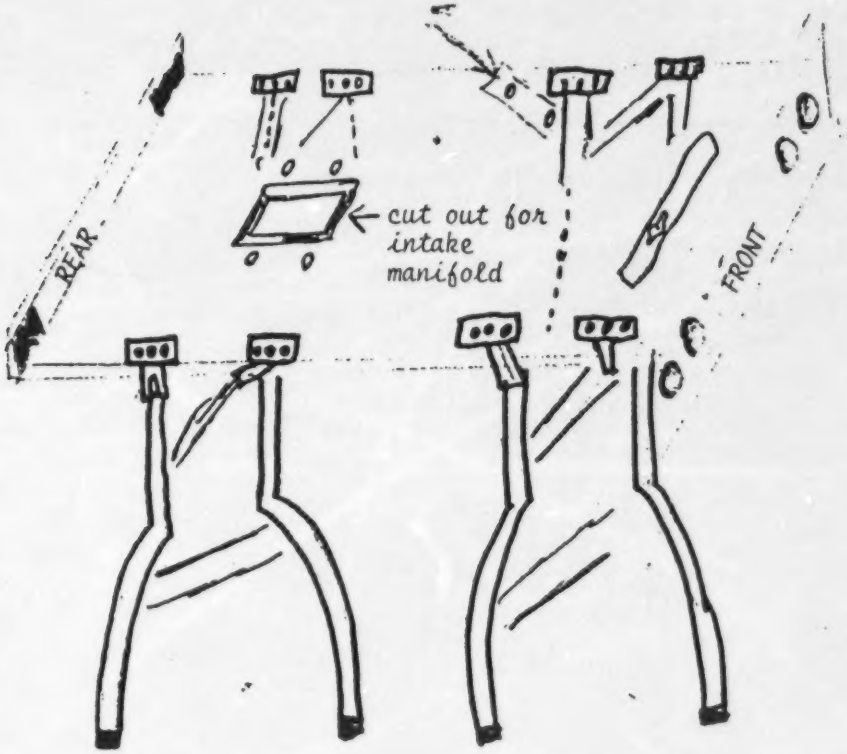
Equipment	Source	Price
Chevrolet - Intake Manifold (New)	Lannan Chevrolet (car dealership) Woburn, Ma.	$83.25
Can also be a used manifold	Woburn Auto Parts (used auto parts)	$25.00 - $30.00
Murray thermostat housing	Eastern Auto Parts, Inc. Malden,Mass.	$ 7.63
2- Thermostats (Bridgeport , Co.)	Eastern Auto Parts Malden, Ma.	$ 3.73/each
2 New gasket seals (Fel-Pro Gasket Co.)	Eastern Auto Parts Malden,Mas.	$ .35/each
Safety Glasses	Sears, Roebuck Co. Burlington, Ma.	$ 3.99
Upper radiator hose to thermostat housing (Gates Co,)	Eastern Auto Parts, Inc. Malden, Ma.	$ 4.85
1/2" to 3/8" drive adapter socket	Craftsman Tools Sears Roebuck Co.	$ 1.89
3/8" drive ratchet wrench	Craftsman Tools Burlington, Ma.	$ 7.49
3/8" drive 6"extension	Sears, Roebuck Co. Burlington, Ma.	$ 4.39
9/16" socket- 3/8"drive	Sears, Roebuck Co. Burlington, Ma.	$ 2.49

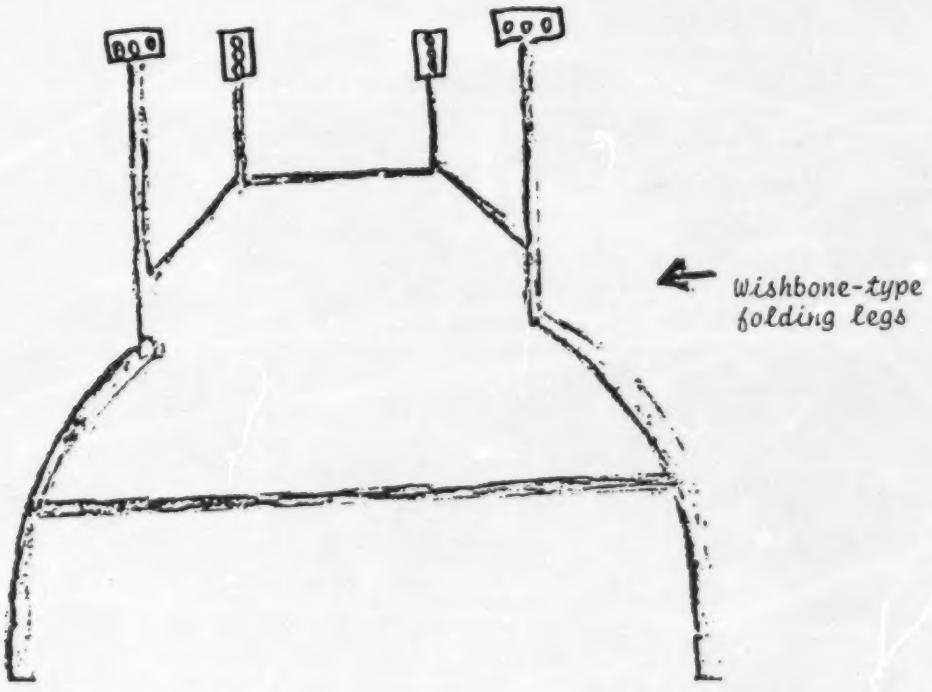
Equipment	Source	Price
3/8" drive torque wrench	Sears, Roebuck Co. Burlington, Ma.	$16.99
Craftsman Standard screwdriver	Sears, Roebuck Co. Burlington, Ma.	$ 3.99

Materials needed for work sample construction (engine compartment).

1/2" plywood - 4 X 8 (makes 3 work sample tops)	Commonwealth Lumber Co. Malden, Ma.	$16.00
Wood strapping 1" X 3" X 12'	Commonwealth Lumber Co. Malden, Ma.	$ 3.00
1 set (2) wishbone type heavy duty folding legs	Beden Hardware Lynn, Ma.	$40.00

OIL FILTER FLANGE CONNECTING HOLES

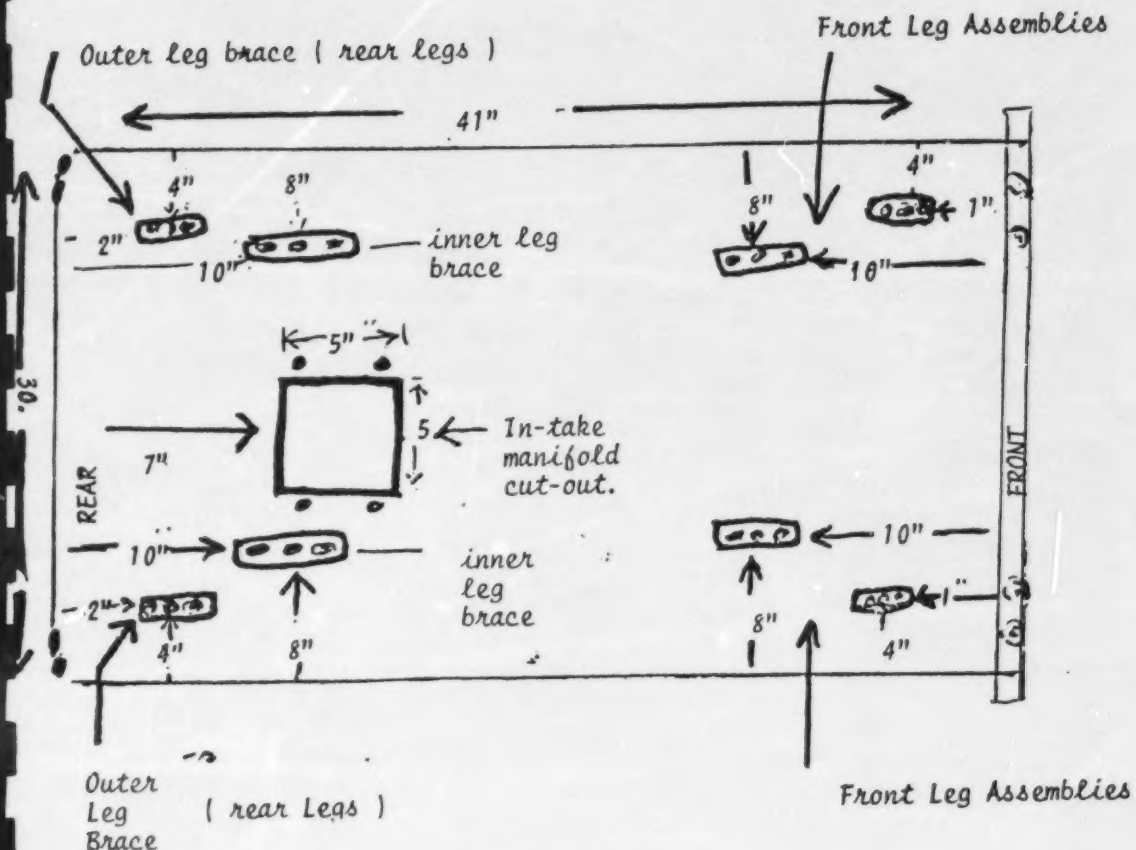




31

C. Work Sample Diagram continued

. Dimensions for leg brace assemblies and intake manifold cut-out.



D. Assembly Instructions

The work sample parts are numbered for there identification:

1. Horizontal top work sample board- 30" X 41".
2. Rear folding leg assembly. Each leg has been cut down 1¼"
3. Front folding leg assembly. for correct vehicle specifications.

The top work sample board is positioned on its side in order to extend or open the folding legs.
The front and rear folding leg assemblies are permanently attached and secured to the bottom of the work sample board.
Position the Work Sample upright (top piece is horizontal).

WORK SAMPLE COMPONENTS:

4. Intake manifold (1)
5. Thermostat (2)
6. Gasket (2)
7. Thermostat housing (1)
8. Hose Clamp (2)
9. Radiator hose and flange set-up

ASSEMBLY INSTRUCTIONS FOR COMPONENTS:

Place the Intake Manifold (No. 4) on top and over the cut-out portion of the work sample board. The manifold " front" is indicated on the part itself and the sample board is also labeled. Insert the bolts from the top with the washers and wing nuts on the bottom or under the sample board. Hand-tighten the nut and bolt assemblies evenly. Double check for secureness and support!
The thermostat and gasket (No. 5 and 6) is pre-assembled in the manifold with the thermostat housing (No. 7) also connected.
Now take the hose clamp (No. 8) provided and place it over the open end of the upper radiator hose and flange set-up (No. 9).
Position the open-end of the hose over the thermostat housing flange opening.

Line up the radiator flange-end of the hose (marked " radiator ") with the bolt holes to the right of the sample box (top board) marked, " radiator flange ". Now connect the radiator flange-end with the bolt and wing nut assemblies.

The loose hose clamp at the thermostat housing-end, can now be positioned where the hose connects to the thermostat flange.

Hand-tighten the clamp around the hose and flange with a screwdriver provided.

Double check all hand tight assemblies for secureness and support !

VII. REFERENCES

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APPENDIX

Definition of Terms

GED - Is the general level of learning and reasoning acquired through schools, experience and self study. There are six GED difficulty levels, ranging from (6) the most difficult to (1) the simplest.

SVP - Is the special vocational preparation and training in terms of the total time required to prepare for an occupation. It ranges from SVP 1, short demonstrations only, to SVP 9, over ten years.

APT - Refers to aptitudes, which is the quickness and ease with which you can learn to do something. Aptitude definitions are included on a separate page in this manual.

WA - Work Activities:

1. Dealing with things and objects.
2. Involving business contacts.
3. Of a routine, definite, organized nature.
4. Involving direct personal contact to help or instruct others.
5. Resulting in recognition or appreciation from others.
6. Involving the communication of ideas and information.
7. Of a scientific and technical nature.
8. Involving creative thing.
9. Involving processes, methods or machines.
10. Involving working on or producing things.

WS - Work situations are the conditions under which the work involved in any occupation takes place. There are ten types described and they have been related to the 66 Worker Trait Groups in the Guide for Occupational Exploration. They are:

1. Performing duties which change frequently.
2. Performing duties of a routine nature.
3. Planning and directing an entire activity.
4. Dealing with people.
5. Influencing peoples opinions, attitudes, and judgements.
6. Working under pressure.
7. Making decisions using personal judgement.
8. Making decisions using standards that can be measured or checked.
9. Interpreting and expressing feelings, ideas, or facts.
10. Working within precise limits or standards.

PD - *Physical Demands are the physical requirements of an occupation and are described in six areas as follows:*

1. *Lifting, carrying, pushing and/or pulling.*
2. *Climbing and/or balancing.*
3. *Stooping, kneeling, crouching, and/or crawling.*
4. *Reaching, handling, fingering, and/or feeling.*
5. *Talking and/or hearing.*
6. *Seeing.*

WC - *Working Conditions are the physical surroundings of a worker in a job. The DOL lists six different types as follows:*

1. *Inside or outside.*
2. *Extremes of cold plus temperature changes.*
3. *Extremes of heat plus temperature changes.*
4. *Wet and humid.*
5. *Noise and vibrations.*
6. *Hazards.*

Aptitudes are rated on a scale of 1 - Highest to 5 - Lowest as follows:

1 - Top 10% of the population
2 - Top third not including the top 10%
3 - Middle third of the population
4 - Lowest third not including lowest 10%
5 - Lowest 10%

The following are the definitions of the aptitudes:

G - General Learning Ability - The ability to "catch on" or understand instructions and underlying principles; the ability to reason and make judgements. Closely related to doing well in school.

V - Verbal Aptitude - The ability to understand meaning of words, and to use them effectively. The ability to comprehend language, to understand relationships between words and to understand meaning of whole sentences and paragraphs.

N - Numerical Aptitude - Ability to perform arithmetic operations quickly and accurately.

S - Spatial Aptitude - Ability to think visually of geometric forms and to comprehend the two-dimensional representation of three-dimensional objects. The ability to recognize the relationships resulting from the movement of objects in space.

P - Form Perception - Ability to perceive pertinent detail in objects or in pictorial or graphic materials. Ability to make visual comparisons and discriminations and see slight differences in shapes and shadings of figures and widths and lengths of lines.

Q - Clerical Perception - Ability to perceive pertinent detail in verbal or tabular material. Ability to observe differences in copy, to proofread words and numbers, and to avoid perceptual errors in arithmetic computation. A measure of speed of perception which is required in many industrial jobs even when the job does not have verbal or numerical content.

K - Motor Coordination - Ability to coordinate eyes and hands or fingers rapidly and accurately in making precise movements with speed. Ability to make a movement response accurately and swiftly.

F - Finger Dexterity - Ability to move the fingers, and manipulate small objects with the fingers, rapidly and accurately.

M - Manual Dexterity - Ability to move the hands easily and skillfully. Ability to work with the hands in placing and turning motions.

MR - Mechanical Reasoning - The ability to understand mechanical principles (pulleys, gears, etc)

E - Eye-Hand-Foot Coordination - Moving the hands and feet together in response to visual signals or observations.

C - Color Discrimination - Seeing likenesses or differences in colors or shades. Identifying or matching certain colors. Selecting colors which go well together.

NAME _____ SCHOOL _____ AGE _____

Work Sample Battery Profile

	Elec. Assem.	Sm Parts Assem.	Color Disc.	Finger Dex.	Man. Dex.	Draft.	Elecric.	Diat. Ed.	Drill Press	Typing	Automotive Oil.Filt.	Mechanic Thermostat
HIGH												
HIGH MED.												
MEDIUM												
LOW-MED.												
Low												

Norming Scores for Work Sample Profiles

	Electronic Assembly	Small Parts Assembler	Color Disc.	Finger Dext.	Manual Dext.	Drafting	Electrical	Dist. Ed. (bagger)	Drill Press	Typing	Automotive Asst.	
											Oil Filt.	Thermostat
High	0	0	0	0	0	0	0	0	0	0-10	0	0
High Med.	1	1	1-5	1-2	1	1-4	1-2	1	1	11-25	1-4	1-16
Medium	2-5	2-9	6-7	3-6	2-5	5-9	3-5	2-4	2-5	26-60	5-15	17-27
Low Medium	6-18	10-12	8	7-8	6	10-21	6-9	5-8	6-8	61-87	16-20	28-39
Low	Over 18	Over 12	Over 8	Over 8	Over 6	Over 21	Over 9	Over 8	Over 8	Over 87	Over 20	Over 39
More than 50% of students completed the work samples in the following times:												
More than	5 mins.	5 mins.	1 min.	2 min.	5 min.	1 min.	1 min.	1 min.	1 min.	6 min.	3 min.	4 min.
Less than	10 mins.	15 mins.	3 min.	3 min.	10 min.	6 min.	3 min.	3 min.	3 min.	7 min.	5 min.	7 min.

Inventory of Social Skills

	Punctuality	Attendance	Peer Relations	Relations With Auth.	Acceptance of Responsibility	Ability to Work alone	Tolerance of Frustration
Strong Area							
Needs Improv.							

Massachusetts, Project No. 79-871-605-014-7, Research Sec. 131
This summary sheet to accompany Twelve Worksample Assignments for Handicapped Students